

REMARKS

In response to the Office Action mailed April 29, 2004, the present application has been carefully reviewed and amended. Entry of the foregoing amendment and reconsideration of the application is respectfully requested.

Claim rejections under 35 USC §112

Claims 34 - 36 stand rejected under 35 USC §112, second paragraph, as being indefinite.

These claims have been amended and are believed to satisfy address each of the rejections under 35 USC §112.

Claim rejections under 35 USC §102

Claims 1 - 5, 7 - 10, 20 - 22 and 25 stand rejected under 35 USC §102(b) as being anticipated by Prachar (US patent 3,881,351).

The examiner asserts " Prachar teaches a method and apparatus for measuring the initial mass flow rate of a constituent (liquid) in the gaseous stream in a conduit (10) comprising injecting a discrete known volume over a known time to the initial flow rate (col. 1, lines 60 - 63), sensing a corresponding resulting change in the flow in the conduit (col. 1, lines 31 - 37); and determining the initial flow rate in response to the introduced known volume, the known time and the sensed resulting change." [Paper 20040422, page 3]

To anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383, 58 USPQ2d 1286, 1291(Fed. Cir. 2001); *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576, 18 USPQ2d 1001, 1010(Fed. Cir. 1991). *Brown v. 3M*, 60 USPQ2d 1375 (CA FC 2001

Prachar does not disclose measuring a liquid

Prachar repeatedly and expressly recites the measurement of a constituent of a gas stream, wherein the constituent is a gas.

20 In analyzing the exhaust gases from the internal combustion engine, it is usually desired to detect the mass flow rates of hydrocarbons, carbon monoxide, and oxides of nitrogen. (Col. 2)

As a specific example, where it is desired to monitor the hydrocarbons in the gaseous stream, the concentra- (Col. 2)

In fact, the title of Prachar is contrary to the examiner's assertion - METHOD OF MEASURING THE MASS FLOW RATE OF A CONSTITUENT OF A GASEOUS STREAM. That is, Prachar is directed to a gaseous stream, a stream consisting of gaseous components, not liquid components.

Therefore, applicant respectfully submits Prachar does not disclose the measurement of a constituent liquid as asserted by the examiner.

Prachar does not determine the initial flow rate

Prachar determines only a mass flow rate of a constituent of a gaseous flow and does not determine the initial flow rate in the conduit. There is no disclosure in Prachar of determining an initial flow rate.

Claim 1

Claim 1 recites in part "determining the initial total flow rate of the liquid in the conduit "

With respect to the initial total flow rate, Prachar states:

Since the total exhaust flow can vary greatly and is substantial in terms of mass flow rate, it is desirable to measure the mass flow rate of the constituent without reference to the composition or flow rate of the total exhaust flow. 15 (Col. 1)

Prachar further states

It is therefore a general object of the invention to provide a method of measuring the mass flow rate of a constituent of a gaseous stream independently of the composition or flow rate of the total gaseous stream. 30 (Col. 1)

Again Prachar states

Further, it will be recognized that the method requires no data on the bulk flow rate or the composition of the gaseous stream. (Col. 3)

Therefore, Prachar does not disclose the recited determination of the initial total flow rate.

No portion of Prachar has been identified to disclose the determination of the initial total flow rate.

The absence of at least these limitations precludes Prachar from sustaining the asserted rejection under 35 USC §102.

As Claims 2 - 5 and 7 - 10 depend from Claim 1 and include a limitations thereof, these claims are also a condition for allowance.

Claim 20

Claim 20 recites in part "determining the initial total flow rate."

As set forth in the analysis of Claim 1, Prachar does not disclose determining the initial total flow rate, but rather a mass flow rate of a constituent of a gaseous flow.

Therefore, at least this limitation is absent from Prachar and thus the asserted rejection under 35 USC §102 cannot be sustained.

As Claim 21 depends in Claim 20 includes a limitations thereof, Claim 21 is also an condition for allowance.

Claim 22

Claim 22 recites in part "the controller configured to determine the initial total flow rate."

The lack of any disclosure in Prachar of determining the initial total flow rate in the conduit, precludes Prachar from sustaining the asserted rejection of Claim 22.

Claim 25

Claim 25 recites in part "the controller configured to determine the initial total flow rate."

The lack of any disclosure in Prachar of determining the initial total flow rate in the conduit, precludes Prachar from sustaining the asserted rejection of Claim 25.

Claim rejections under 35 USC §103

Claims 6, 11-19, 23, 24 and 26-38 stand rejected under 35 USC §103 as being unpatentable over Prachar (US patent 3,881,351).

To support the asserted rejection under section 103, the examiner asserts "it would have been obvious... to use a known device of Prachar in the medical field environment to measure the blood flow rate since such flow rate are necessary for a patient's health issues and for that a specific type of tracer is to be used. It would have

been obvious to medical field operator to use known chemicals so the patient does not have any side effects due to such introduction." [Paper 20040422, page 4]

As stated by the Court of Appeals for the Federal Circuit,

To sustain the rejection under 35 U.S.C. §103, the Board must "explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious." *In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002). [emphasis added]

A prerequisite to making a finding on the scope and content of the prior art is to determine what prior art references are pertinent." *In re Clay*, 966 F.2d 656, 658 23 USPQ2d 1058 (Fed. Cir. 1992). Whether a prior art reference is analogous is a question of fact. *Id.* A reference is analogous if it is from the same field of endeavor as the invention. *Id.* at 658-59.

Measurement of the mass flow rate of a constituent of a gaseous stream, for example, a pollutant in an engine exhaust gas is not the same field of endeavor as determining a blood flow in a conduit, or using a catheter.

The Examiner has not provided a basis for combining the measurement of a constituent of a gas mixture with the determination of an initial blood flow.

The lack of this showing precludes the rejections under 35 U.S.C. §103 from being sustained.

Therefore, Claims 6, 11-19, 23, 24 and 26-38 are in condition for allowance.

The "obvious" standard is at best strained by the assertion that one would modify a gaseous constituent mass flow rate in, for example an engine exhaust flow measurement system to have a catheter for determine a blood flow rate.

These deficiencies render the proposed combination and rejections under 35 U.S.C. § 103 legally insufficient.

The Federal Circuit has further stated:

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The examiner can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references'" *In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002).

The lack of any basis other than the conclusory statements of what would be obvious to a "medical field operator" precludes the asserted rejection from being sustained.

It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against a teacher." *W. L. Gore V. Garlock Inc.* 220 USPQ 300, 312-313 (Fed Cir. 1983). *In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002).

Further, Prachar does not disclose or even suggest the limitations of the rejected claims. Specifically,

"locating a catheter in the conduit ... and determining the initial flow rate: (Claims 11-19);

"A method for determining an initial blood flow rate in a conduit ... optically sensing the liquid characteristic change in the conduit ... determining the initial blood flow rate in the conduit" (Claims 26-33);

"A method for determining an initial blood flow rate in a conduit ... determining the initial blood flow rate" (Claim 37) or

"A method for determining an initial blood flow rate in a conduit ... determining the initial blood flow rate Q, corresponding to an introduced flow rate change to the initial flow rate" (Claim 38).

As no portions of the reference discloses these limitations and no objective basis for the modification has been set forth, these rejections cannot be sustained.


This court explained in *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697, that "deficiencies of the cited references cannot be remedied by the Board's general conclusions about what is 'basic knowledge' or 'common sense.'" *In re Lee*, 61 USPQ2d 1430, 1435 (Fed. Cir. 2002).

The asserted standard of "obvious to a medical field operator" is legally insufficient to sustain the asserted rejections under 35 USC §103.

In addition, the determination of an initial or total flow is directly contrary to the express disclosure of Prachar. Thus, Prachar cannot sustain the asserted rejections.

Therefore, applicant respectfully submits all the pending claims, Claims 1-38 are in condition for allowance, and such action is earnestly solicited. If, however, the examiner believes any further issues remain, the examiner is cordially invited to call the undersigned so that any such issues can be resolved.

Respectfully submitted,


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